

## **PATRYK PAWEL RADYJOWSKI**

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### **EDUCATION**

The University of Texas at Austin, Austin, TX    Expected May 2021  
Ph.D. Graduate program in Mechanical Engineering    GPA 3.83/4.00  
Dissertation: "Additive Manufacturing of cermet based combustion devices"

The University of Edinburgh, Edinburgh, UK    May 2013  
1<sup>st</sup> class Master & Bachelor of Engineering with Honours, Electrical and Mechanical Engineering

### **EXPERIENCE**

**Graduate Research**    The University of Texas at Austin    01/2015 - current

- Use of Laser Sintering AM method with ceramic powders and liquid metal infiltration
- Operations and safety oversight over the experimental combustion laboratory
- Familiarity with laser sintering equipment and high temperature vacuum furnaces
- Mentoring of undergraduate researchers, 7 years of teaching assistance in thermodynamics

**Summer Intern**    Mitsubishi Electric Research Laboratories    05/2017 - 08/2020

- Developed an operational prototype of a space-rated 3D resin printer aimed at CubeSats
- Achieved pressurized flow control, precise positioning, and semi-autonomous operation
- Worked in cooperation with chemical consulting on resin development

**Lead Technical Designer**    Texas Guadalupe - Hyperloop    9/2015 - 7/2019  
MIT Hyperloop II    8/2018 - 7/2019

- Senior designer for SpaceX Hyperloop Competition student pod entry
- Full CAD design, CFD aerodynamic, vacuum validation and FEM structure analysis
- Pneumatic lead – delivered 6000 psi N<sub>2</sub> distribution system approved by SpaceX
- Strong involvement in system integration

**Visiting Research Assistant**    The University of Edinburgh    06/2013 - 12/2013

- Continuation of Master's thesis work on superconducting generator thermal design
- Gained an insight into cryoengineering, applications of superconductors, thermal management, and CAE
- Developed a custom thermal model of cryogenic system
- Provided an optimized design of high current leads for minimal thermal loading

**Visiting Research Assistant**    The University of Texas at Austin    1/2012 - 8/2012

- Assisted research on superadiabatic fuel reformer experiments
- Extensive Fluent CFD simulations of chemically reacting flows

## SKILLS

- Technical interests: Thermal design, Combustion and Additive Manufacturing
- Proficient in C++, LabView, LaTeX, MATLAB, and Python programming languages
- Familiar with Linux, CFD (OpenFOAM, Fluent), and CAD (Fusion 360, SolidWorks)
- Maker – DIY built a 3D printer and a CNC router, machine shop experience
- Practical experience in electronics (Arduino) and PC hardware
- Passionate about rocketry, space exploration and IT technology
- Resistant to stress and adapt easily to a required role.

## ACCOMPLISHMENTS

*Innovation Award*, SpaceX Hyperloop Competition IV (MIT Hyperloop II), July 2019

*Innovation Award*, SpaceX Hyperloop Competition II (Texas Guadalupe), August 2017

*Member*, Longhorn Rocket Association, Fall-Spring 2010/11 & Spring 2012

*Member*, Formula SAE UT Team – Fall 2010

## SELECTED PUBLICATIONS

- P. Radyjowski, I. Schoegl & J. Ellzey (2020) Experimental and Analytical Investigation of a Counterflow Reactor at Lean Conditions, Combustion Science and Technology (under review)
- A. Weiss, W.S. Yerazunis, P. Radyjowski & R. Cottrell (2019) On-Orbit Additive Manufacturing of Parabolic Reflector via Solar Photopolymerization, International Astronautical Congress, October 2019, IAC19C2.IP.2.x51358
- P. Radyjowski, O. Keysan, J. Burchell & M.A. Mueller (2016) Development of a superconducting claw-pole linear test-rig, Superconductor Science and Technology Vol. 29, Iss. 4, 2016 DOI: 10.1088/0953-2048/29/4/044002
- E. Belmont, P. Radyjowski & J. Ellzey (2014) Effect of Geometric Scale on Heat Recirculation and Syngas Production in a Noncatalytic Counter-flow Reformer, Combustion Science and Technology Vol. 187, Iss. 6, 2015 DOI: 10.1080/00102202.2014.978864

## PRESENTATIONS

- P. Radyjowski, R. Bush, & J. Ellzey (2019) Advanced Heat Recirculating Counterflow Reactors Utilizing Additive Manufacturing, Western States Section of Combustion Institute Meeting Fall 2019, October 2017
- P. Radyjowski, R. Bush, & J. Ellzey (2017) Smoldering Behavior of Compacted Sawdust, Western States State Section of Combustion Institute Meeting Fall 2017, October 2017
- P. Radyjowski, S. Newcomb, & J. Ellzey (2017) Design of Complex Reactors using Additive Manufacturing, 10th U.S. National Combustion Meeting of Combustion Institute, April 2017

## WORK ELIGIBILITY

International student – F1 visa non-resident alien – viable for extended STEM OPT program.